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AUTHOR Ross, Sylvia; Zimiles, Herbert
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ABSTRACT

The Differentiated Child Behavior (DCB) Observational System has a two-fold purpose: first, it provides a description and analysis of patterns of classroom interactions in educational programs and program impact on children's functioning; and second, it provides feedback to supervisory staff so that analysis of programs contributes to implementation of the in-service teacher training program. Findings in initial studies indicate the instruments are sensitive and appropriate to open as well as traditional classrooms. Data has revealed significant differences among groups in predicted directions, and findings seem to pinpoint factors contributing to these differences. (Author)

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The Differentiated Child Behavior Observational System*

Sylvia Ross
Herbert Zimiles

Bank Street College of Education

Introduction

In recent years, researchers have increasingly sought to characterize classroom interactions in a systematic and relatively objective manner. In addition to the ongoing search for generalizable information regarding teacher effectiveness and classroom climate, there is growing discontent with widely applied standardized tests which have provided the primary source of evaluation of educational programs. The increasing recognition of the limitations of these measures, particularly in reference to assessment of the effects of federally-funded programs on inner-city children's abilities, has stimulated a search for broader and more encompassing evaluation and program analysis measures.

The Differentiated Child Behavior Observational System (DCB) was originally developed under the auspices of a Follow Through sponsor--Bank Street College of Education--as one of a number of self-evaluation measures designed to assess the extent to which its own program had been successfully implemented.[1] The Bank Street sponsorship of Follow Through classes in 14 communities in the United States involves the implementation in inner-city public school classrooms of a "Developmental-Interaction," open-classroom approach developed and applied over many decades in the College's own School for Children.[2]

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1. Elizabeth Gilkeson, the Director of this program, contributed significantly to the formative stages of the development of the DCB.

2. See Edon Shapiro and Barbara Biber, "The Education of Young Children: A Developmental-Interaction Approach," Teachers College Record, September 1972, 74, 1.

The complexity of life in the informal or open classroom points to the difficulties involved in the attempt to record all relevant information. The term "relevant" used in this context defines the extent to which choices are made on the basis of values, or of judgments as to which behaviors will provide criterion measures of children's classroom functioning. The content of the DCB instruments most certainly reflects a set of assumptions and values underlying the Bank Street approach.[1] It also reflects an attempt to delineate a comprehensive and detailed roster of typical classroom interactions. The basic assumption underlying the design of the DCB is that the children's behavior will reflect the attitudes, values and curriculum foci of the classroom instructional team.

The development of the DCB System was also motivated by the need to respond to a number of fundamental issues and questions confronting educators today.

1. The Open Classroom vs. the Traditional Classroom

   a. How are the differences in these two settings reflected in children's interactional behaviors? What is the effect of informal spatial arrangements and greater teacher and pupil mobility on the quantity and quality of classroom interactions?

   b. Does an "open," independence-fostering, child-centered environment, which encourages self-expression, produce a greater incidence of destructive, acting-out behavior than a setting which has a high degree of control as one of its major practices?

   c. Does the attempt to integrate and balance cognitive, affective, aesthetic and social learning experiences result in less cognitive involvement than that found in traditional settings where academic learning is the primary objective?

2. The Relation of SES and Ethnicity to Program Patterns

   a. To what extent does the SES and ethnicity of a school population affect quantity and quality of classroom interactions?

   b. How different is the behavior of the inner-city child in the open classroom from his behavior in a traditional setting? How different from middle-class children in either setting?

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1. Elizabeth Gilkeson, Working Paper, Bank Street Follow Through, Bank Street College of Education, 1970 (mimeo).

The Observational System

The DCB is used "live" in the classroom; and the data are gathered by trained observers who encode children's interactional behaviors on timed and change-of-behavior bases. One of the distinctive features of this system is its emphasis on the substantive aspects of children's interactions: it provides data regarding the content as well as the source and direction of each entry. In addition, unlike many previously designed observational approaches, it incorporates a number of procedures which are applicable both to informal, open classes as well as to more traditional settings. The observational system includes two instruments: the DCB Form and the Classroom Scan.

The DCB Form has been designed to provide quantitative and qualitative data regarding children's verbal and non-verbal classroom behaviors. The focus (whether in observations of small, large or total groups) is on the number of occurrences of specified behaviors as well as on the nature of the interaction in each instance, i.e., child-to-child, child-to-adult, to or by self; adult-elicited or child-initiated; individual or choral response. The referent child's sex is also indicated in each instance.

The six major behavioral categories of the DCB are: Gives Information; Asks Questions; Expresses; Acts Destructively; Organizes and Manages; and Represents and Symbolizes. Each of these six categories includes from six to nine subcategories, which are designed to identify specific behaviors within each general category. The first two categories, "Gives Information" and "Asks Questions" are primarily concerned with verbal behaviors in the cognitive domain. The subcategories subsumed under these headings have to some extent been ordered according to their complexity. For example, "Causal Reasoning and Problem Solving," the seventh subcategory listed under these headings, represents the most advanced level, while "Identity-Situation" (a non-differentiated or personalized statement or question) represents the simplest level.

Category III ("Expresses") includes both verbal and non-verbal behaviors which are primarily affective in content, i.e., expression of feelings and attitudes (including negative expressions) and of preferences and needs. Category IV ("Behaves Destructively") is rather rigorously defined to refer to behaviors in which there is overt evidence of physical abuse or threat of physical abuse. Category V ("Organizes and Manages") represents the attempt to assess the extent of autonomy evidenced in behaviors, for example, "Initiates Task," "Seeks Answers in Books or Charts" as well as "Selects Materials." Category VI focuses on representational and symbolic interactions, and includes dramatic play, improvisation, and narration.

A single DCB Form is used for each five-minute interval of observational recording with a total of 12 DCB Forms used for one day of observation. The observations follow a systematic course which is designed to provide representative samples of the behaviors of all the children in the classroom, as they are observed in groups of various sizes and participating in ongoing activities with and without adult intervention. Activity, grouping, and adult role are indicated for each DCB Form.

At the end of each five-minute observation period, the observer completes a brief rating scale indicating the extent to which coded entries were activity-related and the degree of task persistence encountered.

The Classroom Scan provides a measure of the behavior of each child in the classroom during each of six time samples during the day (i.e., whether involved in an activity, observing, involved in a social-physical interaction, destructive act or showing "no observable focus"). It also provides for a description of the number and kinds of ongoing activities and groupings, identifying adult role, if any (i.e., supporting or directing) in relation to each group. The activities are further described as to the perceptual modes involved, degree of abstraction,

and dimensionality. Each scan is administered immediately after a set of two DCB Forms has been completed. A total of six scans are made in one day of observation.

Overview of Previous Findings

This brings us to our preliminary work with the DCB and some of our findings, which will be described very briefly. Our initial study involved three groups of elementary school children aged five through eight. The first group was drawn from the Bank Street School for Children, which has an open-classroom approach, and consisted primarily of middle-class children. The second group came from Bank Street Follow Through classes in inner-city public schools--also with an open-classroom approach. The third group of children attended non-Follow Through inner-city public schools with a traditional classroom approach. Thus three diverse reference points were provided for examining the DCB data.

Findings (which reflect mean totals in each instance) indicate that:

1. In terms of sheer numbers of children's interactions, there were substantial differences among the three groups. The Bank Street School for Children classrooms totalled twice the number of interactions found in the traditional public school classes, with Follow Through closer to the Bank Street School, showing 60% more entries than the traditional classes ($p < .01$).

2. Among the six major categories of child interaction recorded by our system, the most frequent was the cognitive category concerned with giving information. The traditional public school classes showed by far the fewest higher-order cognitive interactions. The Bank Street Follow Through Program had more than twice such interactions ($p < .01$) and the Bank Street School almost three times as many ($p < .001$).

3. The second cognitive category, that concerned with asking questions, occurred much less frequently. However, when examined on a proportional basis, differences among the school groups were even more massive. The children in the Bank Street Follow Through classes asked more than four times as many questions

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as the children in the traditional public school classes, and the Bank Street School children were found to ask questions more than five times as often as the latter groups ($p < .01$, $.001$ respectively).

4. The second most frequent category of behavior recorded by our system was that concerned with the expressiveness of children. The Bank Street Follow Through groups and the Bank Street School classes showed approximately equal amounts of expressive behavior, but both frequencies were almost twice that found in the traditional public school classes ($p < .05$, $p < .01$ respectively). When looked at on a proportional basis, differences among the three school groups in expressive interactions were relatively small, especially when compared with the large differences found among the school groups in cognitive interactions.

5. Another interactive category system which yielded large differences among the school groups was the one concerned with autonomous behavior. By far the least amount of autonomous behavior was shown by the traditional public school groups. The Bank Street Follow Through Program showed almost three times as many such behaviors, while the Bank Street School showed more than twice as many autonomous behaviors than the Bank Street Follow Through classes and more than six times as many autonomous behaviors than the traditional public school classes ($p < .01$).

6. Among our most surprising findings was the low incidence of destructive behavior found in all three school groups. The largest difference was between the Bank Street School and the two public school groups ($p < .01$); there were five times the number of destructive interactions in both the Bank Street Follow Through classes and in the traditional public school classes.

7. Although the number of adult-elicited behaviors was similar in the three groups, there was a far greater number of child-initiated behaviors in the Follow Through and Bank Street School groups than in the traditional classes ($p < .001$).

However the Bank Street School totalled considerably more child-initiated child-to-adult behaviors than did either Follow Through or the traditional public school classes.

Therefore, although both in socioeconomic level of population and public school setting, the Follow Through classes were more like the traditional public school classes than the Bank Street School, the DCB findings indicate that the children's interactions in Bank Street Follow Through classes were more like those in the Bank Street School classes than those of the traditional public school. It should be pointed out that the Follow Through classes did not all manifest identical patterns, but could be identified along a continuum, with some classes showing patterns very similar to those of the Bank Street School, and some closer to those of the traditional public school.

Current Work

Current work on the DCB is concerned with:

1. Refining the coding procedures and expanding their coverage.

2. Examining the path of change in the data recorded by the DCB during the course of the academic year. Patterns of classroom interaction obtained from DCBs in the fall will be compared with those revealed in the spring.

3. Determining the degree of relationship between DCB scores and an assessment of teacher behavior. An independent assessment of teaching behavior will be related to classroom interaction data obtained from the DCB.

4. Assessing the reliability of DCB scores by comparing data from two different observers who observe in the same classroom during the same time period, with data based on observations by the same observer on different days. Although previous work with the DCB indicates that it is sufficiently reliable to differentiate sharply among different types of classrooms, it is essential to estimate the magnitude of error attributable to variation among different observers and to day-to-day variation within the same classroom and the same observer.